

DRAFT

MEMORANDUM

To: Project Review Coordinator, Office of Assistant Secretary
for Water and Power Development

From: Assistant Director - Technical Services

Subject: Application for Preliminary Permit for proposed hydroelectric
project, FPC No. 2521 located on Cascade Creek, Alaska.

Your memorandum of _____ (date) _____ requested our comments on
the above project.

The project would be located about 16 miles northeast of Petersburg on
(Cascade Creek and would affect lands of the United States within Tongass
National Forest.

The project would use the Swan Lake-Falls Lake drainage basin, and would
be constructed in four stages. It would include a power plant for the first
30,000 kilowatt installation, located at tidewater on Thomas Bay. The first
stage of project development would consist of the necessary water flow control
works at the outlets of Swan Lake and Falls Lake to provide storage regula-
tion, penstock, powerhouse, and transmission line. The power plant would
have two 5,000-kilowatt units but would be designed to accommodate second
and third stage expansions and the transmission line would be sized for
ultimate plant capacity. The second stage would provide for construction
of the ultimate dam for increased storage capacity at Swan Lake, a penstock
for the second turbine, and a 10,000-kilowatt turbine generator. The third

*Cancelled
C.O.
alteration
7/15/65
Important
changes
red-
underlined*

*Transmitted
to
C. Long*

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stage would be another 10,000-kilowatt turbine generator and its penstock.

The fourth stage would be power development of the head between Falls Lake and Swan Lake by construction of a remotely-controlled 8,000-kilowatt plant at the upper end of Falls Lake.

The proposed development would be used to meet the municipal requirements of the City of Petersburg and the needs of an anticipated growth of new timber industries.

The following language should be incorporated in the Departmental Letter to the Federal Power Commission:

Continue { "The proposed project would be located on Cascade Creek on the mainland in southeastern Alaska. The project area is remote and undeveloped. A foot trail constructed by the

U.S. Forest Service extends from tidewater to Swan Lake.

Deleted { The only other feature of human origin in the basin is a stream gaging station on the lower reaches of Cascade Creek, maintained by the U.S. Geological Survey.

"Swan Lake lies at the 1514-foot elevation 2.5 miles from tidewater.

Deleted { The drainage area is extremely precipitous and peaks rising above 5000 feet occur within two miles of the lake margins. Lateral tributaries to the lake are steep and

turbulent. A single exception is the lateral inlet entering the lake near its upper end; this stream possesses a section of lesser gradient in its lowermost reaches. The largest tributary of the lake also enters at the lake's upper end.

Swan Lake
This tributary originates on the steep western slopes of the Coast Range only five miles from Swan Lake. It is swift and turbulent throughout most of its length, but the 1.2-mile lowermost section of this tributary has a gentle gradient and possesses gravels suitable for fish spawning. A 35-foot waterfall precludes fish migration beyond this 1.2 mile section.

Swan Lake
"Swan Lake possesses depths in excess of 500 feet. Its waters are cold, clear, and slightly colored gray-green by glacial flour. The lake and its mountainous setting are extremely scenic.

Cascade Creek
"Cascade Creek, the outlet of Swan Lake, possesses a very steep gradient and coarse bottom materials. Cascade Creek flows through a small shallow lake situated one-half mile below Swan Lake, and thence through Falls Lake, a 20-acre body of water lying at the 1150 foot elevation. A falls near tidewater on Cascade Creek blocks the migration of anadromous fish into the basin.

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"As a result of plantings during 1958 and 1959, Swan Lake contains a thriving population of rainbow trout. The two streams tributary to Swan Lake having sections of gentle gradient and suitable gravels are important for spawning of this trout population.

In { "Sportfishing pressure in the Cascade Creek basin is at present light, owing to the difficulty of reaching the lake.

Detailed { A few anglers fly in to Swan Lake with light, float-equipped aircraft. Even fewer hike in to the lake over the Forest Service trail. Visitations to the basin will certainly increase in future years, however, with the expanding human population of the area and with the burgeoning of Alaska's

In { tourist industry. Construction of the project may affect the resident trout population in Swan Lake.

Vulatem { "Wildlife of importance in the project area are black bear, mountain goats, and Sitka blacktailed deer. Small game species include snowshoe hare, blue grouse and ptarmigan. Small numbers of waterfowl breed on Swan Lake, and the lake is used by a few Canada geese during the molting period.

"Hunting pressure in the basin is negligible, although Swan Lake serves as a base camp for a few goat hunters each year.

Substituted
Sentence
above { "Construction and operation of a hydroelectric project in the Cascade Creek-Swan Lake basin would produce moderate adverse effects upon the trout population resident in Swan Lake.

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These adverse effects would result largely from the impact of reservoir fluctuations upon (1) fish food production in the lake, and (2) access to the stream spawning areas used by the trout population.

Included "Effects of the project upon wildlife would probably be negligible.

"Should a permit for this project be issued, detailed studies would be required to assess the effects of the project on fish and wildlife, and to provide a basis for developing adequate measures for their protection and enhancement. The permittee should be advised to cooperate of the importance of cooperation project planning during the period of the permit, in developing project operational standards least harmful to fish and wildlife resources and in arriving at supplementary mitigation and enhancement measures."

condition
It is requested that the following provision be included in any permit issued for this project:

"The Permittee shall, during the period of project planning, cooperate with the U.S. Fish and Wildlife Service and the Alaska Department of Fish and Game for the purpose of planning and designing adequate conservation measures:

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(1) to prevent loss of or damage to existing fish and wildlife resources, (2) to mitigate and compensate for the loss of or damage to these resources, and (3) to develop and improve these resources where practicable."

If any changes or omissions are contemplated in this language, we request an opportunity to review them prior to transmittal of the Departmental letter to the Federal Power Commission.

James T. McBroom